

Listing and Amendments to the Claims

DT01 Rec'd PCT/PTO 16 DEC 2004

This listing of claims will replace the claims that were published in the PCT Application:

1. (currently amended) A linearly expandable router (100), comprising:
 - a first routing engine (128)-having input and output sides;
 - a second routing engine (128)-having input and output sides;
 - a third routing engine (128)-having input and output sides;
 - a first link (110), said first link (110)-coupling said input side of said first routing engine (128)-to said input side of said second routing engine (128);
 - a second link (112), said second link (112)-coupling said input side of said first routing engine (128)-to said input side of said third routing engine (128); and
 - a third link (116), said third link (116)-coupling said input side of said second routing engine (128)-to said input side of said third routing engine (128);wherein said first, second and third routing engines (128)-are arranged in a fully connected topology.
2. (currently amended) The apparatus of claim 1, wherein:
 - said first, second and third routing engines (128)-each have N inputs to said input side thereof and M outputs from said output side thereof;
 - and
 - said linearly expandable router (100)-formed from said first, second and third routing engines (128)-having 3N inputs and 3M outputs.
3. (currently amended) The apparatus of claim 2, wherein:
 - said first link (110)-providing said N inputs to said first routing engine (128)-to said input side of said second routing engine (128)-as a first N additional inputs thereto and providing said N inputs to said second routing engine (128)-to said input side of said first routing engine (128)-as a first N additional inputs thereto;

said second link ~~(112)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said third routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a second N additional inputs thereto; and

said third link ~~(116)~~ providing said N inputs to said second routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a second N additional inputs thereto and providing said N inputs to said third routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a second N additional inputs thereto.

4. (currently amended) The apparatus of claim 1, and further comprising:
 - a fourth routing engine ~~(128)~~ having input and output sides;
 - a fourth link ~~(114)~~, said fourth link ~~(114)~~ coupling said input side of said first routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~;
 - a fifth link ~~(118)~~, said fifth link ~~(118)~~ coupling said input side of said second routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~; and
 - a sixth link ~~(120)~~, said sixth link ~~(120)~~ coupling said input side of said third routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~;wherein said first, second, third and fourth routing engines ~~(128)~~ are arranged in a fully connected topology.
5. (currently amended) The apparatus of claim 4, wherein:
 - said first, second, third and fourth routing engines ~~(128)~~ have N inputs to said input side and m outputs from said output side; and
 - said linearly expandable router ~~(100)~~ formed from said first, second, third and fourth routing engines ~~(128)~~ having 4N inputs and 4M outputs.

6. (currently amended) The apparatus of claim 5, wherein:

said first link ~~(110)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said second routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a first N additional inputs thereto;

said second link ~~(112)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said third routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a second N additional inputs thereto;

said third link ~~(114)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said fourth routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a third N additional inputs thereto;

said fourth link ~~(116)~~ providing said N inputs to said second routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a second N additional inputs thereto and providing said N inputs to said third routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a second N additional inputs thereto;

said fifth link ~~(118)~~ providing said N inputs to said second routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~ as a second N additional inputs thereto and providing said N inputs to said fourth routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a third N additional inputs thereto;

said sixth link ~~(120)~~ providing said N inputs to said third routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~ as a third N additional inputs thereto and providing said N inputs to said fourth routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a third N additional inputs thereto.

7. (currently amended) A linearly expandable broadcast router ~~(100)~~, comprising:
at least three broadcast router components ~~(102, 104, 106)~~, each of said at least three broadcast router components ~~(102, 104, 106)~~ having an input side and an output side; and
means ~~(110, 112, 116)~~ for coupling said at least three linear expandable broadcast router components ~~(102, 104, 106)~~ in a fully interconnected topology.
8. (currently amended) The apparatus of claim 7, wherein said input side of each of said at least three broadcast router components ~~(102, 104, 106)~~ has N inputs and said output side of each of said at least three broadcast router components ~~(102, 104, 106)~~ has M outputs.
9. (currently amended) The apparatus of claim 8, wherein:
each one of said at least three broadcast router components ~~(102, 104, 106)~~ further comprises a routing engine ~~(128)~~ coupled between said input and output sides thereof; and
said coupling means ~~(110, 112, 116)~~ further comprises means for coupling ~~(130, 132, 130)~~ said N inputs for each one of said at least three broadcast router components ~~(102, 104, 106)~~ to said routing engine ~~(128)~~ for the other ones of said at least three broadcast router components.
10. (currently amended) A method of constructing a linearly expandable broadcast router ~~(100)~~, comprising:
providing first, second and third routers ~~(102, 104, 106)~~, each having input and output sides;
coupling, using a first discrete path ~~(110)~~, said input side of said first router ~~(102)~~ to said input side of said second router ~~(104)~~;
coupling, using a second discrete path ~~(112)~~, said input side of said first router ~~(102)~~ to said input side of said third router ~~(106)~~; and
coupling, using a third discrete path ~~(116)~~, said input side of said second router ~~(104)~~ to said input side of said third router ~~(106)~~.

11. (currently amended) The method of claim 10, and further comprising:
- providing a fourth router (~~108~~) having input and output sides;
 - coupling, using a fourth discrete path (~~114~~), said input side of said first router (~~102~~) to said input side of said fourth router (~~108~~);
 - coupling, using a fifth discrete path (~~118~~), said input side of said second router (~~104~~) to said input side of said fourth router (~~108~~); and
 - coupling, using a sixth discrete path (~~120~~), said input side of said third router (~~106~~) to said input side of said fourth router (~~108~~).